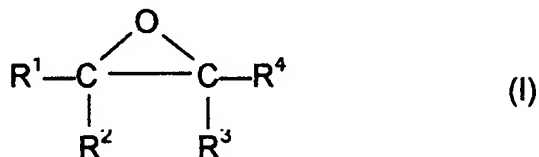


Claims

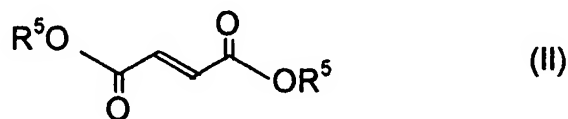
We Claim:

1. A method for inhibiting the evolution of hydrogen sulfide (H₂S) from molten sulfur comprising contacting the molten sulfur contaminated with at least one sulfhydryl compound with an effective amount of a scavenging agent selected from the group consisting of anhydrides and polymers thereof, conjugated ketones, carbonates, epoxides, monoesters and diesters of unsaturated dicarboxylic acids and polymers of these esters, where the scavenging agent is in liquid form at contact temperature.
2. The method of claim 1 where the epoxides have the formula:



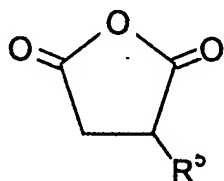
wherein R¹, R², R³, and R⁴ independently are selected from the group consisting of hydrogen and hydrocarbon groups having between about 1-20 carbon atoms, selected from the group consisting of straight, branched, and cyclic alkyl groups, aryl, alkaryl, and aralkyl groups, and straight, branched, and cyclic alkyl groups substituted with oxygen, heterocyclic alkyls containing oxygen as a ring constituent, and wherein R² and R³ may be joined to form a cycloalkyl or a heterocyclic alkyl having oxygen as a ring constituent.

3. The method of claim 1 where the monoesters and diesters of unsaturated dicarboxylic acids have the formula:

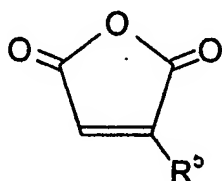


where R^5 are independently selected from the group consisting of hydrogen, C_1 to C_{12} alkyl, alkenyl, aryl and polyhydric alcohol moieties having 1 to 12 carbon atoms.

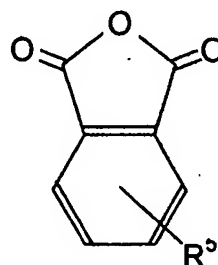
4. The method of claim 1 where the anhydrides have the formula:



(IIIa)



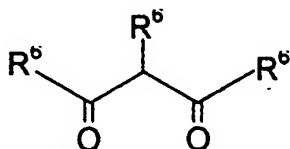
(IIIb)



(IIIc)

where R^5 is selected from the group consisting of hydrogen, C_1 to C_{12} alkyl, aryl, and alkenyl and polyhydric alcohol moieties having 1 to 12 carbon atoms.

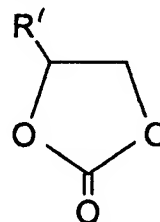
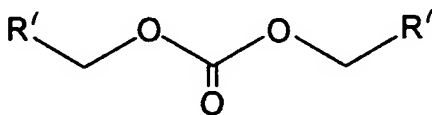
5. The method of claim 1 where the conjugated ketones have the formula:



(IV)

where R^6 are independently selected from the group consisting of hydrogen, C_1 to C_{12} alkyl, aryl, and alkenyl.

6. The method of claim 1 where the carbonates have the formula:



(V)

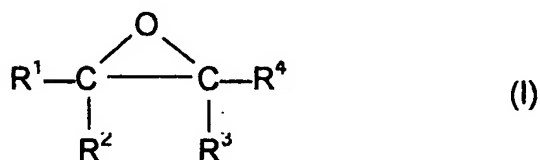
where R^7 is independently selected from the group consisting of hydrogen,

C₁ to C₁₂ straight and branched alkyl, aryl, alkenyl, cyclic and non-cyclic alkyl, aryl, alkenyl.

7. The method of claim 1 where the scavenger agent is physically mixed with the molten sulfur and a molar amount of scavenging agent to sulfhydryl compound ranges from about 0.5 to 1 to about 1.5 to 1 in the molten sulfur.
8. The method of claim 1 where the contacting is conducted by atomizing the scavenging agent into a vapor space over the molten sulfur.
9. A method for inhibiting the evolution of hydrogen sulfide (H₂S) from molten sulfur comprising contacting the molten sulfur contaminated with at least one sulfhydryl compound with an amount of a scavenging agent selected from the group consisting of anhydrides and polymers thereof, conjugated ketones, carbonates, epoxides, monoesters and diesters of unsaturated dicarboxylic acids and polymers of these esters where the scavenging agent is in liquid form at contact temperature, where the molar amount of scavenging agent relative to the sulfhydryl compound ranges from about 0.01 to 1 to about 100 to 1.
10. The method of claim 9 where the molten sulfur is not discolored after contacting with the scavenging agent.
11. A molten sulfur composition having the evolution of hydrogen sulfide (H₂S) therefrom inhibited comprising:
 - a) molten sulfur contaminated with at least one sulfhydryl compound, and
 - b) an effective amount to inhibit H₂S evolution of a scavenging agent selected from the group consisting of anhydrides and polymers thereof, conjugated ketones, carbonates, epoxides, monoesters and diesters of unsaturated dicarboxylic acids and polymers of these

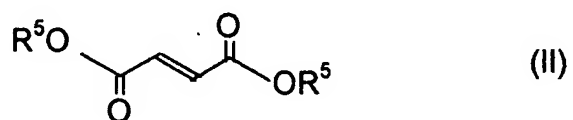
esters where the scavenging agent is in liquid form at contact temperature.

12. The composition of claim 11 where the epoxides have the formula:



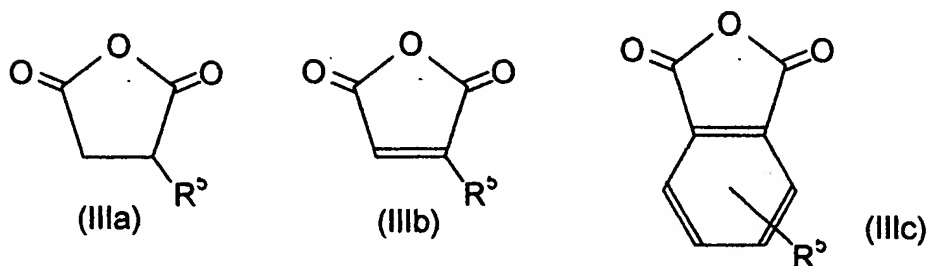
wherein R^1 , R^2 , R^3 , and R^4 independently are selected from the group consisting of hydrogen and hydrocarbon groups having between about 1-20 carbon atoms, selected from the group consisting of straight, branched, and cyclic alkyl groups, aryl, alkaryl, and aralkyl groups, and straight, branched, and cyclic alkyl groups substituted with oxygen, heterocyclic alkyls containing oxygen as a ring constituent, and wherein R^2 and R^3 may be joined to form a cycloalkyl or a heterocyclic alkyl having oxygen as a ring constituent.

13. The composition of claim 11 where the monoesters and diesters of unsaturated dicarboxylic acids have the formula:



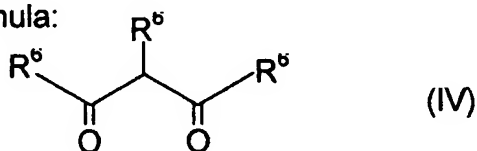
where R^5 are independently selected from the group consisting of hydrogen, C_1 to C_{12} alkyl, alkenyl, aryl and polyhydric alcohol moieties having 1 to 12 carbon atoms.

14. The composition of claim 11 where the anhydrides have the formula:



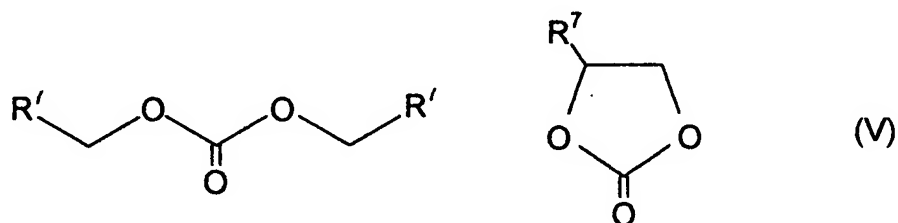
where R⁵ is selected from the group consisting of hydrogen, C₁ to C₁₂ alkyl, aryl, and alkenyl and polyhydric alcohol moieties having 1 to 12 carbon atoms.

15. The composition of claim 11 where the conjugated ketones have the formula:



where R⁶ are independently selected from the group consisting of hydrogen, C₁ to C₁₂ alkyl, aryl, and alkenyl.

16. The composition of claim 11 where the carbonates have the formula:



where R⁷ is independently selected from the group consisting of hydrogen, C₁ to C₁₂ straight and branched alkyl, aryl, alkenyl, cyclic and non-cyclic alkyl, aryl, alkenyl.

17. The composition of claim 11 where the scavenger agent was physically mixed with the molten sulfur and a molar amount of scavenging agent to

sulfhydryl compound ranges from about 0.5 to 1 to about 1.5 to 1 in the molten sulfur.

18. The composition of claim 11 where the scavenging agent was incorporated into the molten sulfur by atomizing the scavenging agent into a vapor space over the molten sulfur.
19. The composition of claim 11 where the molten sulfur is not discolored.
20. A molten sulfur composition having the evolution of hydrogen sulfide (H_2S) therefrom inhibited comprising:
 - a) the molten sulfur contaminated with at least one sulfhydryl compound, and
 - b) an amount of a scavenging agent selected from the group consisting of anhydrides and polymers thereof, conjugated ketones, carbonates, epoxides, monoesters and diesters of unsaturated dicarboxylic acids and polymers of these esters where the scavenging agent is in liquid form at contact temperature, where the molar amount of scavenging agent relative to the sulfhydryl compound ranges from about 0.01 to 1 to about 100 to 1.